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EXTENSION SERVICE

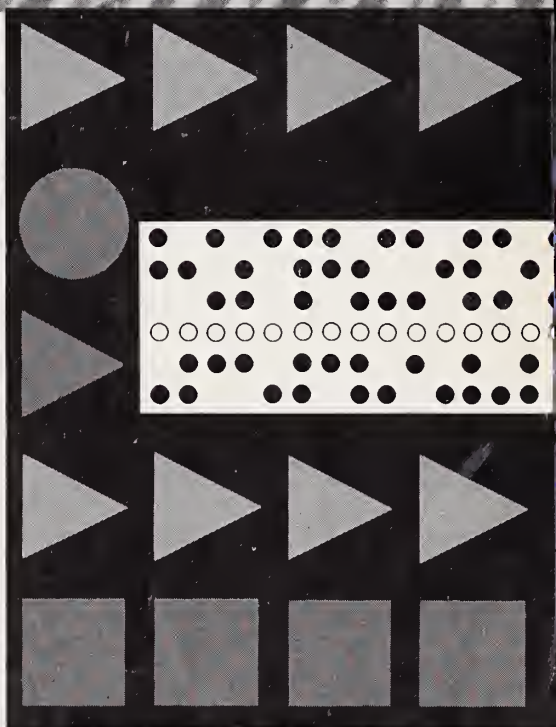
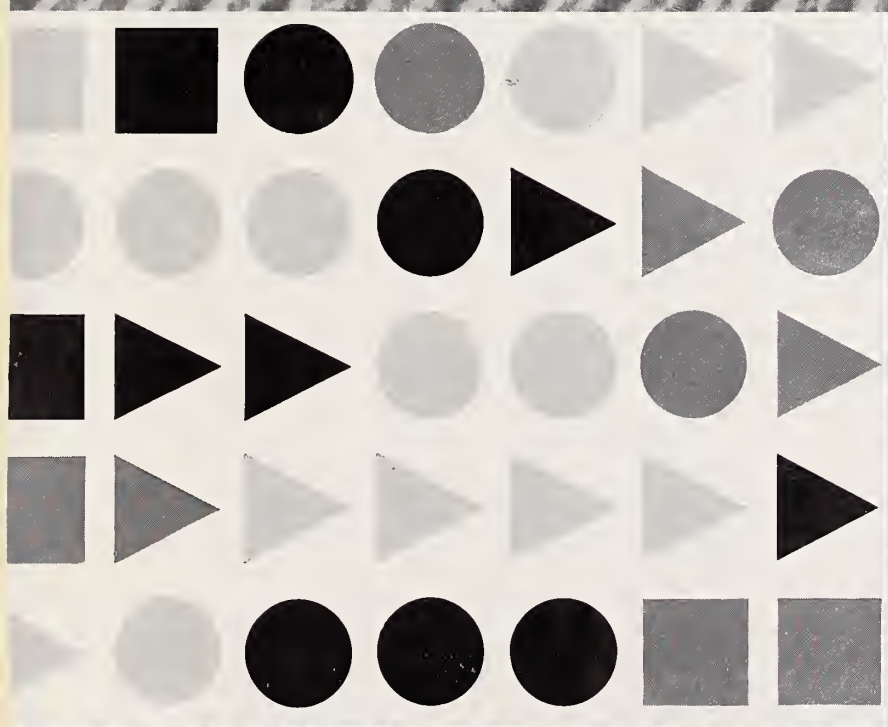
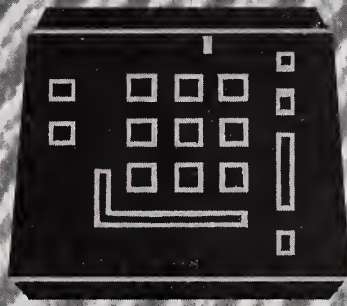
REVIEW

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CURRENT SERIAL RECORDS



FARM RECORDS—A MANAGEMENT TOOL

The Extension Service Review is for Extension educators—in County, State, and Federal Extension agencies—who work directly or indirectly to help people learn how to use the newest findings in agriculture and home economics research to bring about a more abundant life for themselves and their communities.

The Review offers the Extension worker, in his role of educational leader, professional guideposts, new routes, and tools for speedier, more successful endeavor. Through this exchange of methods, tried and found successful by Extension agents, the Review serves as a source of ideas and useful information on how to reach people and thus help them utilize more fully their own resources, to farm more efficiently, and to make the home and community a better place to live.

ORVILLE L. FREEMAN
Secretary of Agriculture

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EXTENSION SERVICE

REVIEW

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EDITORIAL

How can farm records projects be best used to facilitate Extension's total educational work?

Before you answer that question let's take a quick look at farm records in the scheme of things.

America's commercial farmers, who account for most of the Nation's farm production, face many complex managerial decisions. They need the best type of farm records as a managerial tool. And they evidently want help in analyzing record data in making decisions on alternative courses of action. Some already have records systems that meet their needs, along with requisite educational help. Others, apparently, are showing increasing interest in having better records systems and educational help in using them.

A number of States have started new farm records projects in recent years. Other States have added to the number of farmers involved in farm records projects or programs.

Electronic data processing is giving added impetus to farm records keeping. Use of electronics is doing more than just reducing some of the chore work. It is also making it possible to handle highly complex records swiftly. Let me hasten to add that the traditional record book system is also flourishing.

Just how important is Extension work in farm records in relation to its total educational job with farm people? Some farm management specialists feel that if Extension is to be of maximum help to commercial farmers it must have comprehensive knowledge of the farm business. To get this, farm records are needed. If you accept that thinking then here is the answer to the question we posed:

Records work—valuable as it is in its own right—can also be a vehicle to facilitate further educational work in depth with commercial farmers. 'Depth' is just a journalistic term for getting beneath the surface of a story or subject.—WAL

+ Farm Records—a management tool +

by E. P. CALLAHAN
*Economist, Farm Management
Federal Extension Service*

THE very nature of a farmer's occupation is changing rapidly today. Many farmers—like many of the rest of us—are unable to keep fully abreast of the requirements of their vocation.

For example, many of them make inadequate responses—or respond too late—to the pressures of the price-cost squeeze on their net incomes. One reason is that they do not really know what is happening to their net incomes.

Contrary to popular assumption, farm records kept only for income tax reporting on a cash basis do not provide for any computation of net farm income for the year. Yet those are about the only records most farmers keep. They have no inventories. Their depreciation allowances are computed with a view to the tax consequences, rather than to ascertain the cost of the farming operation. This is legitimate, but it does not help the farmer understand his business as well as he could.

Too many low-income farmers delay adjustment to the cost-price squeeze. (Too many are delaying really adequate adjustment until the next generation!) But in recent years a number of fairly large-scale farmers have discovered—after the fact—that they had moved pretty far toward insolvency without knowing it. Others may make this same disconcerting discovery unless they keep better records or draw up net worth statements more often.

Without records of his physical inputs and yields and of dollar costs and returns by enterprises, a commercial farmer frequently fails to ask himself the right questions about his farm operations—a necessary first step toward improving them. And yet most commercial farmers are without such records.

What enterprises to eliminate and what to expand or concentrate on? Where and when to sell? How to buy advantageously? How best to use credit? How to bargain for a good lease or partnership arrangement? To buy or lease farm equipment? These are some of the practical problems that face commercial farmers. Records will not solve such problems. But a farmer who knows what he is doing, from the study of an adequate set of records, can usually handle such problems better than one who doesn't. More farmers need to have more control over their farm businesses.

As Extension workers, many of us must confess that we have not been as alert to this need as we should have been. And our attempts to meet it have sometimes been inept or inadequate.

The problem is fundamental: it is rooted in the history of American agriculture. The farmer of 50 years ago was primarily interested in the world of nature. He knew more about soils, plants, and animals than he did about data, markets, and people. He didn't spend much time managing money. He had great pride in his independence. He thought, with some justification, that he should stay out of debt, or get out as soon as he could. He was keenly aware, frequently, of price and yield as important factors in his life. However, he usually had only very simple or very vague concepts of demand and supply. His concepts of cost and profit were likewise vague. He often thought that his farm had made a profit if he had more money than a year earlier. It was as simple as that. Much of this idea persists today, long after its validity or adequacy has been outlived.

As farms become larger and more highly specialized they take on more of the characteristics of businesses and farmers need more of the concepts and attitudes of businessmen. Many are well abreast of this need, but far too many are lagging.

This situation poses a most urgent challenge to us as Extension workers. One of the major educational needs of many farmers who hope they will still be farming in 1970 and 1980 is for help in learning to think and act like businessmen. This includes education in record keeping. More basically, it includes help in developing the concepts and attitudes that will motivate farmers to keep the needed records, and to use the recorded information to find profit-earning opportunities.

This issue of the *Review* is focused on this important challenge to Extension. Each article presents a different approach, experience, or viewpoint. Together they will help us to see this educational need as clearly as we see the need to carry new plant and animal technology to farmers. And it is hoped that they will help to nudge us toward educational development for ourselves that will enable us to better meet this educational need of farmers. ■

The farmer receives total expenses and receipts by enterprise and by class.

by **CHARLES E. ROBERTSON**
Pinal County Agent in Charge
and **DAVID A. BRUECK**
Pinal County Agent
Arizona

Line	Code	Description	Amount	Balance
1	1-1-1
2	1-1-2
3	1-1-3
4	1-1-4
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County Agents Develop A Record Project

IT WAS A troubleshooting call on cotton in 1958 that brought the problem to light that was plaguing many cotton growers. Charles Robertson, Pinal County Agent, was called to John Fearn's ranch near Casa Grande for a routine call on cotton. In the course of the conversation John Fearn, who was having difficulty with record keeping, asked why farm records could not be kept on electronic data processing machines in a manner similar to the DHIA program. This set the time-proven Extension procedure in motion: A farmer had mentioned his problem; a county agent found this problem to be a growing concern among many farmers; research and the Land-Grant System came up with the answer.

The finished product is essentially enterprise cost accounting at a price and time that all can afford. The farmer converts all his business transactions—expenses, income, production, debts, labor—into machine language, using a standardized code book, and enters the information on electronic data processing machine code sheets. The farmer sends these code sheets monthly to the county agent, who checks them for clarity and accuracy. They are then sent to the University of Arizona computer where the information is converted onto electronic data processing machine punch cards. The computer does the rest and furnishes four copies.

The farmer now gets total expenses and receipts by enterprise—cotton, alfalfa, beef cattle; and by class—labor, fertilizer, and feed. These categories are totaled both by months and to date during the fiscal year. The number of the check or draft paying for the item always appears beside the amount.

Other information about each item such as tons of fertilizer and acres it covered, can be listed; totals by field or farm in a multiple farm operation are also recorded, both by month and to date during the fiscal year.

Social Security, withholding tax, and other deductions are recorded separately for each man with a monthly summary for each laborer. In the summary at the end of each month's run, an inventory section records an up-to-date summary of total debts still outstanding, assets in depreciable equipment, and assets in non-depreciable property. Current expenses and receipts are totaled separately by source, such as bank, cotton gin, cash, or draft on lending agency. A monthly reconciliation of these totals with the source quickly verifies the records. If there is an error, a separate check register in check number order is made up by the machine for easy location of errors, which can be corrected the following month. The check register also records the name of the person or firm receiving the check. Much of the above information is duplicated into different usable forms, but because the machine takes care of different totals, it is only recorded by the farm operator once in easy form.

This was accomplished by the county agent putting both the experience of farmers and accountants and the facilities of the Land-Grant University together with the Systems Engineering Department. The goal was to record each check and income by a simple coding method and to let the machine take over the sorting, printing, and totaling by categories. Basic to the simplicity of coding this information is an indexed code book. After a month or two of experience, a farmer can code out in an hour, 60 to 80 checks or income items.

In fact, farmers traditionally paying \$50 to \$100 a month for income tax accounting now may use a system which has the possibility of costing somewhat less per month, providing they are willing to code information themselves. As a bonus, they get cost accounting information they have wanted but which has been too impractical to get by hand.

County Agent Dave Brueck took the initial material beginning in 1960 when he arrived in Pinal County. He farm-tested it, revised it, and tried again until the system could be "lived with." Then a big step was taken in polishing up the system when the University of Arizona received equipment with much greater flexibility, capacity, and speed than that formerly used to process farm records. It took Brueck and Jack Gaines, Electrical Engineer and graduate student in Business with years of experience in computer use, to skillfully convert the program to the new equipment. This equipment incidentally works so fast that it converts information from 100 checks into the finished records in approximately 20 seconds.

Farmer-use has dictated the formation of this system. A good example is one of the first cooperators, Joe Cooper, and his hog enterprise. He was considering the construction of an air-conditioned farrowing house; however, an analysis of his records showed a \$1,500 loss in a 6-month period on the hogs.

Up to the time Mr. Cooper started using this system, he really didn't know how much the hogs were making. All he knew was that the farm was making "X number of dollars" to pay income tax on every year and his accountant was getting up to \$80 a month to keep track of this. For much less money the machine kept separate and totaled the money spent on each enterprise. So with the beginning hog and feed inventory and an ending in-

ventory, plus hogs sold during the period. Mr. Cooper for the first time knew how this particular enterprise was treating him financially. When he found a loss of \$1,500 on that enterprise, he realized the cotton had probably been "carrying" the hogs.

Information was already in the records to compute feed conversion and other efficiency factors. Changes made during the next 6 months put the hog enterprise back in the black, and winter records compared to summer records will tell Mr. Cooper if he can afford to spend more money in cooling facilities and if so, how much.

We feel we have only scratched the surface on making this information more usable to the farmer and the accountant. For instance, the Industrial Commission of Arizona requires a quarterly report on the portion of money each laborer receives for feeding livestock, raising cotton, or something else. It will not be difficult to add a program into the system that will make up that report and figure the insurance due on each employee. The same can be true of Social Security and Arizona State Income Tax which must be withheld. The program can be extended to compute cost of monthly production for dairies and poultrymen, including fixed costs such as depreciation. Only when the farmer has this information readily available can he make intelligent decisions.

We have not stopped at this point in making the system more adaptable to individual farms, and farmer use continues to guide us. In 1963 a farmer expressed the desire to use it as much to record specific dates as an accounting system. For instance, he wanted to record water use on certain fields and when and how much fertilizer or insecticide went on certain areas of a farm. The system is so flexible that this can be done on the same code sheets for the machine to sort out and place in the proper location in the records. In effect, then, the farmer using this feature also ends up with a compact record of all important data in a readily referred to form as he builds history on his farm. End of the year special summarization, as small cost, can point out to him what individual machines or different operations are costing him.

One other application of electronic data processing use in agriculture was developed in 1963, also in Pinal County. A cooperator in the Farm Records Program, Hugh Hine of Maricopa, also does up to \$25,000 worth of custom work per month. The "accounts receivable" portion of this business was very difficult for him to keep track of. After County Agent Dave Brueck had completed some in-service training on electronic data processing machines, it was not difficult to write a program that keeps this agricultural business up to date. Duplicate runs can even make up the bills for him at the end of the month.

Our farmers are telling us that some of their biggest problems lie in the area of management. The county agent stands at the threshold of opportunity in helping him mechanize this area to a degree not dreamed of a few years ago. The facilities and training for this lie in many of our Land-Grant Universities. It needs only to be carried to the farmers by the county agent. ■



County Agent Dave Brueck goes over the finished record with Maurice Martin, a farmer in Pinal County, Arizona.

by THOMAS J. McCORMICK
Assistant Extension Editor

and VERLE R. HOUGHABOOM
Extension Economist
Vermont

Hopes Run High in the World of ELFAC

■ ELFAC is the name and electronic farm accounting is the game.

But quite a story lurks behind the gimmicky title. This new procedure is something of a landmark in regional cooperation, offers a superior management tool to farmers, and is a breakthrough for educational and research programs. As befits a joint effort, all segments do some of the work and share the costs.

Research and Extension representatives from Maine, Massachusetts, New York, and Vermont, along with a representative from the Federal Extension Service, form a coordinating committee. Their job is overall policy, including such items as developing operating procedure, preparing and distributing materials, and clearing all matters requiring standardization.

But cooperation is involved all along the line, from the time a farmer jots down his figures until they make the return trip from the processing center.

In most cases, a farmer's first contact with ELFAC is through his county agent. Through him, the farmer learns that ELFAC is an accounting service for farmers, one which supplies the basis for better management. Also, ELFAC helps researchers to serve farmers better.

Inevitably the farmer asks about cost. Currently, dairy farmers pay a fixed fee of \$20 plus 50 cents per cow, or \$45 per year for a 50-cow herd. Other enterprises are charged accordingly. This pays for materials and processing. Overhead is paid, directly or indirectly, by Extension or the Experiment Station.

The agent always concedes that ELFAC can't do anything a farmer can't do himself. Diplomatically, the agent also will point out that few farmers actually keep the detailed records they need for today's high-pressure agri-business. ELFAC takes the sweat out of the job.

With detailed figures, a farmer can keep tabs on his income and his expenses, move into cost accounting, satisfy the Federal needs for records, and level out his income tax. The key word is *can*. ELFAC simply keeps the records, it doesn't make the decisions.

When a farmer joins the program, the agent teaches



Researcher Malcolm Bevins observes the sorting of farm entries at the processing center in Brandon, Vermont.

him the simple coding system. Week by week, the farmer fills out a basic data sheet recording financial transactions, changes in inventory and other pertinent information. These are mailed to his State University, then forwarded to the processor, Ayrshire Association Breeders in Brandon, Vermont. Cards are punched and held until the end of the month. At that point, a complete financial summary with cumulative totals is prepared for each of the 400 participants.

Three district programs in each State benefit from this report. The individual farmer has his basic records in A-1 order with a minimum of work. But this, though important, is relatively minor.

More significantly, he has running totals that show him exactly where he stands. He can compare his figures with the same point last year and can project them to the end of the year.

The farmer with diversified interests can see which areas are paying off. And if his wife is so minded, she can set up similar accounts for the household.

Admittedly, this is a bit theoretical. A few farmers run their businesses in a business-like way; many more do not. Enter Extension. The county agent and farm management specialist now have the perfect tool for their counseling work.

The farmer may lack the skill, time, or interest to make full use of the ELFAC reports. But to the trained eye, they offer an X-ray picture of the farm operation with nothing hidden. No probing for financial data reluctantly given. No long search for fragments of records or reliance on memory.

Then, too, the fact that the agent has assisted in setting up the system puts him in a somewhat new role. He is one with whom money matters can be freely discussed: he's an insider. After the first year, the savings in time are considerable; the effectiveness of Extension management counseling is increased.

Although the prospective benefits to the farmer and to Extension are imposing, they are even more so to researchers. Each participant, upon entering the program,

agrees to make his figures available to researchers on a confidential basis.

Perhaps it is this pulse of the agricultural economy which is most significant. For the first time, researchers can know what is happening instead of what has happened. Hopefully, they can get a much clearer idea of why it is happening.

It is here that interstate cooperation takes on added meaning. By working together with uniform reports, a larger sample can be used for any branch of farming. Or comparisons can be made in the same enterprise for different States or different markets.

Naturally, the broadened experience and diversity of training of the combined leadership keeps the program from becoming too narrow or inbred. With a group of economists and educators honing each other's thinking, no problem can be sluffed off because of local prejudices.

Although the trend of this article has been highly optimistic, reflecting the views of the program leaders, it should be realized that ELFAC is no touchstone for success. Common prudence dictates a listing of some of the problems.

As might be expected, farmers have been slow to enter the program. Traditionally they are active men who avoid pencil-pushing. Good records rank low on the list of felt needs.

This tends to force the county agent into a salesman's role, a most unwelcome, time-consuming, and sometimes frustrating task. Then, when a farmer does sign he must be taught the coding system. Normally this is done in groups. But although the system is basically simple it is foreign to the experience of most farmers.

Later, when the figures arrive, a farmer may have a sense of disappointment. ELFAC, after all, gives no answers, makes no decisions. Unless the farmer is sophisticated enough to think of such things as return to capital, labor efficiency, and similar tools of the economists, he may be disillusioned. At this critical point, much depends on whether a busy agent can find time to show him how to use the figures.

Nor is frustration completely unknown to researchers. Has there ever been a research man who thought he had



At the center, data sheets are translated into punches on a card in preparation for the high-speed totaling.

too much data or even enough? He is torn between the justified desire for more complicated figures and the even greater need to keep the system simple and practical for the farmers. ELFAC after all is primarily for the individual farmer.

And, finally, the word "committee" in itself is used by the cynical as a synonym for "problem." And an interstate committee adds the compounding factors of distance and different needs.

Having given the Devil's advocate a long curtain call, let's come back to the side of the angels. Despite the problems, Extension and Experiment Station workers are solidly behind the program. Farmers are less enthusiastic, as they almost always are to change. Furthermore, ELFAC benefits are intangible. The tried-and-true method of demonstration doesn't fit as well. Word-of-mouth advertising is more circumspect because financial matters are private.

But the body of satisfied participants is growing. For the most part, these are the opinion leaders of agriculture. Moreover, the tide of agricultural history is running with the system. Management decisions become more critical as profit margins shrink while the stakes grow higher.

A farmer simply can't guess any more and stay in business, he must have the facts. ELFAC, its developers firmly believe, is by far the most efficient way available of gathering these facts.

At present, each participant gets a quarterly and year-end business analysis. A complete quarterly financial statement probably will be offered next year.

The number of participants is expected to grow. Other States may join through State Universities, farm organizations, and private firms.

Even farther ahead is the researcher's hope of isolating as yet unrecognized critical factors in management decisions. With additional factors isolated, counseling could be placed on a more professional basis. ■

On the farm, the Bernard Boyers of Williston list receipts and expenses on ELFAC forms. A progressive couple, they find the ELFAC system a fine management tool.



Farm Business Group Helps Farmers Keep Records

by **MELVIN P. GEHLBACH**
Area Farm Management Specialist
Kentucky

LET'S FACE IT—most farmers dislike keeping records. They would rather trade tractors, buy or sell cattle, experiment with a new herbicide, or ride a combine during harvest than spend time keeping a record of their business.

Why is this? Chiefly because they have not been in a position to know exactly what records to keep, how best to keep them, and then how to make full use of them as a tool for better management. Farm business records, to be a useful tool in management, need to be complete, accurate, and comparative.

Farmers Organize Group

In 1961 farmers in six western Kentucky counties, in cooperation with the Cooperative Extension Service of the University of Kentucky, organized the Ohio Valley Farm Analysis Group, Inc. to assist them with their farm record analysis. The plan started with 80 members. Each member paid an annual fee of \$100 toward cost of operating the group. Farmer members and Extension share in the cost of the program in approximately a 2-to-1 ratio. An elected five-man board of directors determines policy. An area Extension specialist in farm management, appointed by the Department of Agricultural Economics and the Extension Service, works directly with members on an area basis.

The first annual summary was prepared in April of this year, covering records kept during 1962. The Farm Analysis Group Summary revealed that the 55 farms, typical of the area, averaged 684 acres in size, represented nearly a quarter of a million dollars invested per farm, and had a \$55,056 average gross cash income. The net management return, after deducting a charge for capital and unpaid family labor, averaged \$5,218 per farm. These commercial farms showed wide variations in production, farm costs, gross returns, and net management earnings. Each farmer's record is confidential.

A record needs to do more than merely tell a farmer how much money he made during the year. It needs to show the reasons why a farm earned what it did. To do this we need: (1) A record of production for each crop, (2) a record of production (pounds produced) for each livestock enterprise, (3) an allocation of feed to each class of livestock, and (4) a breakdown of expenses so that a comparative analysis of farm operating costs may be made.

Most of these records are readily attainable. In fact,

many farmers write down the numbers and pounds of livestock sold if they are keeping only a cash journal. Our problem is to get items recorded in a way that will permit them to be summarized and used.

To start this program, the farmer needs assistance in establishing a Beginning of Year Inventory for each class of livestock and for feed, grain, and forage on hand. This inventory needs to be uniform for all members.

An inventory of land resources is needed. Land should be divided into acres tillable, acres nontillable, woods, and wasteland. Values placed on the land should be comparable among farms with comparable soils and should reflect soil differences between farms.

The farmer keeps his own record. He keeps the record of cash income and expenses, production of crops and livestock, and allocates farm grains fed to each livestock enterprise. The area specialist in farm management, on scheduled visits to the farm, edits the record and makes certain that all records are being kept uniformly. He also helps the farmer to establish continuous depreciation schedules.

At the end of the year, inventories are entered in the record on the same basis as at the start of the record. The area specialist has an appointment with each member at a central office to edit the entire record, making certain that all entries are complete and classified.

Records are totaled and summarized, and an analysis report is prepared for the farmer. His summarized record gives him the financial summary for the year, information for preparing his income tax return, returns for feed fed to each class of livestock, crop yields, farm costs, and many other factors concerning his farm. Facts and figures take on new meaning, however, when he receives this information in his Farm Analysis Summary comparing averages for farms grouped by size and type.

Comparative Farm Analysis

"How do I compare?" This is uppermost in the minds of members as they come to the meeting to receive their completed reports. They get a look at the amount of capital they have used. Capital per acre and capital per man are two figures they want to know.

Production is the key to farm earnings, but comparison of physical quantities of grain, tobacco, and livestock is not enough. Total Value of Farm Production (dollars) is calculated for each farm and is related to investment, acreage, amount of labor, and amount of farm expense incurred. These four relationships give a real clue as to where a farm excels or falls short.

A summary of land use crop yields, farm costs, and other factors gives the member a rather complete run-down of his operation. The report gives him the information for his farm, averages for a group of comparable farms, and averages for groups of other farms of different types and acre size.

Each livestock enterprise is summarized separately and cattle herd owners are divided into several groups, i.e., those selling feeder calves, those finishing cattle for market, or those purchasing all cattle being fed. Hog enterprises are also summarized separately according to type.

Annual costs for fertility, farm buildings and fences, machinery and equipment, labor, taxes, and capital charge are summarized for each group of farms. Many of these costs are also calculated on a per-tillable-acre basis for more detailed comparison.

Machinery and labor costs are shown as a scatter chart so each farmer may see where he stands in the array of costs. Some farmers have high costs when related to what they are producing, others may need to spend more money to do a better job of farming. Good management is knowing where to spend a dollar to make more than a dollar in return.

The farm management specialist needs to see more than the farm record to properly interpret the analysis. He needs to know the farm and, most important, he needs to know the farmer and farm family. The amount and quality of labor hired, likes and dislikes of the farm operator, and the interests of younger members of the family all play an important part in interpreting the record and using it as a basis for decision making.

Keeping alert to farm practices used by members whose records show excellence in certain phases of their farm business provides an opportunity that should not be overlooked. At the same time, the farm management specialist has opportunity to introduce on key commercial farms the latest research findings from the University and other Land-Grant Colleges.

Observations made by the farm management specialist and passed on to other farmers, where applicable, is a useful practice. Tours made by members within the area and to other States are also used to follow up on results of farm records.

Farmers appreciate a tour when they can get facts from records and, at the same time, see the operation. Each year members of the group have taken a 2-day trip by chartered bus to record-keeping farms in another State.

The Farm Business Group approach gives entree to more effective Extension work with large commercial farms. The analysis report provides county agents with factual, up-to-date information concerning commercial agriculture in the area. This information, summarized by groups of farms of different sizes and type, is a real asset to Extension teaching of farm management to farmers and to students in the classroom. While dealing directly with a limited number of farmer members, an Extension worker reaches large numbers indirectly as nonmembers have contacts with members and attend Extension meetings.

Farmers with straight-grain farms, diversified farms, and highly specialized, intensive livestock farms see the advantage in being members of a group that assists them in getting an analysis of their business.

In many commercial farming areas in the United States the number of farmers who could provide themselves with the services of such a group is almost unlimited. About 100 members seems to be a desirable-sized group for a single specialist.

Farmers need assistance with records if they are to obtain the greatest benefits from them. Farm records take on new importance when used in a comparative analysis. The Farm Business Group approach, cooperating with the Cooperative Extension Service, is a natural development where both parties share costs and make use of the information obtained. As farmers realize the need for supervised records to obtain a business analysis and are willing to pay a fee to support a group, Extension can play an important role in cooperating to make the most effective use of farm records to members and to agriculture in general. ■

**Mr. Gehlbach died October 8, 1963, while attending the Southern Regional Farm Management Workshop in Memphis, Tennessee.*

Mail-In Poultry Records

—an interdisciplinary educational effort

by JAMES T. HALL
Farm Management Specialist
and CARL O. DOSSIN
Poultry Specialist
Pennsylvania

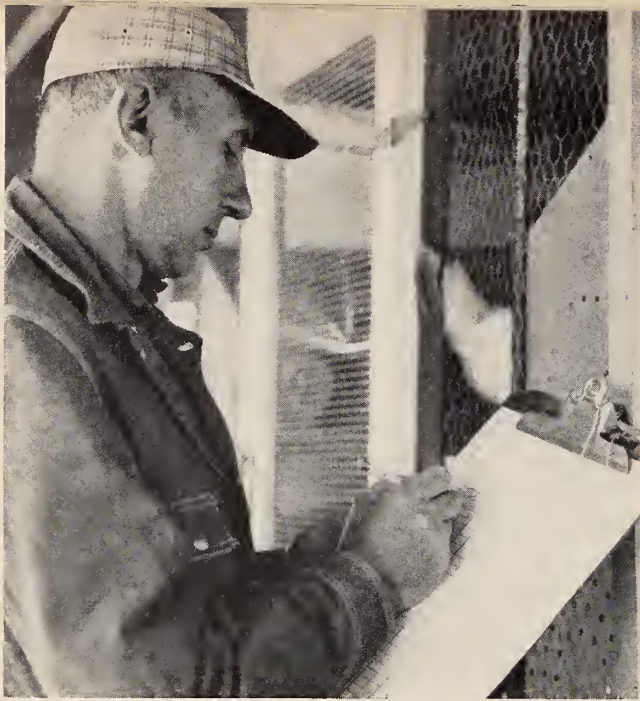
HAVE you ever tried to help a poultry farmer lower his cost of producing a dozen eggs without a clear idea of his present costs or what he could reasonably expect to achieve? This was the position of poultry and farm management specialists at Penn State until a few years ago.

Poultry farming in the State had progressed rapidly

in a technological sense but little was known concerning such things as records, costs of producing a dozen eggs, farm feed conversion rates, mortality, and other factors.

Need Current Data

As the constant need for current data became more apparent the poultry and farm management extension sections devised a pilot project in monthly mail-in poultry records which began January 1, 1961. The pilot project has two main purposes: 1) To develop a system that will assist commercial laying flock owners in evaluating and improving their management; and 2) gathering current data on financial and production factors rela-



Each month the farmer transfers data from the pen records to a report sheet which is mailed to the University.

tive to egg production in Pennsylvania, to be used in educational programs.

In 1961, 34 flocks in 11 counties completed the program; in 1962 the number had grown to 54 flocks in 28 counties. Currently there are over 75 flocks from 36 counties sending in information monthly. These flocks range from 1,000 to 15,000 birds and are separated into groups: Under 2,500; 2,500-5,000; 5,000-10,000; over 10,000; and hatching egg flocks.

Production records were developed by the poultry specialists and the financial and labor records by farm management.

The production records require the poultrymen to keep the usual day-to-day pen records of eggs produced, feed used, birds culled, and mortality. Each flock has its own code number which is kept confidential.

By the 10th of the following month the information from the pen record sheets is totaled and transferred to a mail-in sheet. These are forwarded, one for each pen if desired, to farm management extension where they are processed. By the 25th of the month the cooperators receive a monthly performance report for their flocks.

These reports are supplemented quarterly with summaries on mortality, production feed conversion, and feed cost per dozen for the preceding 3, 6, or 9 months. From these records we have been able to get current information on the production and financial aspects of the egg operation.

Use the Facts

After the annual summary is prepared, county personnel and poultry and farm management specialists use the data in many ways, these include the following:

1. *Work with individual cooperators.* The cooperators are visited through the year by either the county agent and poultry specialist or county agent and farm man-

agement specialist. After the yearly summary is prepared a team made up of a county worker, a poultry specialist, and a farm management specialist visits each cooperator. They go over the analysis of his business with him, emphasizing areas where adjustments need to be made, and helping him plan for these adjustments.

2. *Countywide poultry meetings.* Poultry and farm management specialists appeared together on county poultry meetings during 1962-63 using the results from the 1961 and 1962 poultry records to stimulate poultrymen's thinking on such problems as high feed cost, poor feed conversion, high mortality, and low production. Typically where both poultry and farm management specialists were on the program, the poultryman discussed the production data and the farm management man discussed the financial data.

Here were some concrete facts that the poultrymen could see and mentally size up their own operations.

3. *Meetings with allied industry personnel.* The record results were used extensively in formal and informal meetings with representatives of feed, chick, and poultry supply firms.

4. *General publication.* A 24-page publication summarized the results of the 1961 records. Over 2,500 copies were distributed to poultrymen and allied industry personnel in Pennsylvania and many other States. A similar publication is available summarizing the 1962 records.

5. *Articles, newsletters, radio tapes, and television.* Poultry and farm management specialists made wide use of the results of the poultry account project in mass media educational endeavors. One 8-minute and three 15-minute TV programs were produced by farm management. The 8-minute show was in conjunction with county personnel in the State's leading poultry county.

The monthly report to cooperators and county agents is accompanied by a newsletter prepared by either poultry or farm management specialists. This not only emphasizes points brought out by the records but also contains general management tips.

Electronic Data Processing

Starting with about 35 additional new cooperators in 1963, electronic data processing is being used for the financial records. This too, is a monthly mail-in procedure which will allow us in the near future to return both production and financial summaries monthly.

The unique system being used is one under development by farm management research personnel. Its main feature is that it requires no coding either by the farmer or the processing personnel.

It is anticipated that all cooperators will be using the monthly mail-in system for financial records beginning January 1, 1964. This will allow all cooperators to have monthly- and year-to-date financial reports on their various farm enterprises.

With this information in conjunction with the monthly production reports, they should be able to make management decisions much more promptly. At present financial summaries are made only once a year. ■

Achieving Family Goals

by L. J. BODENSTEINER
District Extension Economist
Iowa

NO INCOME-PRODUCING business can expect to reach its maximum potential without a good set of records. Therefore, no farm should expect to achieve success without a useful set of business records.

Present-day farming requires large amounts of capital, knowledge of changing technology, and skilled workers. Records can serve as a tool to facilitate high levels of management.

Good records are also an invaluable aid in evaluating and measuring family goal achievement. A farm family may try to achieve personal and family goals, while other goals may be primarily farm business or financial. However, sometimes personal and family goals are competitive. It is important for families to recognize these characteristics.

Goals should be identified and appraised in terms of family values and resources. A system of values or priorities needs to be established so that first things come first.

The progress made in achieving family goals depends largely on the level of management that the family employs. After goals are clearly identified and appraised, the planning stage is set. Developing a plan to reach goals will mean organizing the farming business to produce the necessary income.

In conjunction with a farm business plan, a family living plan or budget should be established. Farm records will reveal the outcome of both the farm and family living budget.

It is often difficult for a farm family to fully evaluate its goals in terms of reality. Often the goals are not realistic and may be impossible or too costly to achieve. Family sacrifices may be too great and goals too costly: new or adjusted goals are often necessary.

Records can serve as a guide to more realistic goals and help to more clearly identify those that a family can expect to achieve. Using records

as management aids depends on their ability to interpret and put to use the facts revealed by the records.

The net worth statement is the most useful record as an aid in evaluating and measuring financial achievement.

First of all, it identifies the amount of resources the family employs in the business. Second, it indicates financial progress. The family net worth change reflects gain or loss as a result of net farm income and accounts for total income used as savings in the business. This, plus family living expenses and nonbusiness expenditures, represents total income.

The measure of financial progress as revealed by the net worth statement record sets the stage for effective family and business planning. It permits sound planning and provides a useful tool in setting family goals. The cost and time element of a goal can be more accurately appraised.

The net income statement and the business analysis record are a further guideline for a farm business. Detailed information provided by this section of the farm business records helps to uncover opportunities that can be put to profitable use by the firm's management.

Growing size and complexity of the farming business increase the need for helpful tools—aids that will contribute effectively to the role of management. Goals may give direction of effort but achievement of family goals relies on management.

A successful farming business requires a combination of resources—land, labor, and capital—that presents the opportunity to produce a satisfactory income. But these resources must be employed to produce a level of output that will maximize farm income. The levels of productivity and efficiency at which resources are employed in the farm business are necessary information and can be measured with the farm business record.



A well-managed farm business can provide an income that will help families reach their goals. Facilities like these benefit the whole family.



Enterprise analyses are becoming more important with the trend toward specialization. Records in this area serve as guides in deciding on changes involving reorganization of resources that will lead to a higher income combination. Comparative analysis with other farms of comparable size and type may be used as a basis for study and future planning when suitable records are available and used.

The main objective of a farm business record is to facilitate the management of the business. Records place the facts and values of the business before the manager and operator.

In most situations the manager and operator is the farm family. The family's goals are real though not always clearly defined and not always easy to achieve. Farm records can aid in evaluating and measuring achievement of family goals. Farm families are continually facing decisions—farm records can serve as decision-making tools. Good management is the result of making the right decisions most of the time. ■

Farm Business Analysis And Large-Scale Farms

by W. H. KENDRICK
Manatee County Agent
Florida

FARM BUSINESS ANALYSIS can save a county agent's energies and make his time count.

Agricultural Extension agents are dedicated to the proposition of encouraging agricultural people to become the best informed individuals. This not only concerns the best practices proved through research and experience, but also includes the highest degree of management and leadership skills.

To see farm people making strides in leadership abilities, technical know-how, and management skills brings satisfaction to county Extension agents. To know that our educational programs had an important part in these learning experiences and was a motivating force for them to attain a higher degree of technical and management ability is nothing short of a real thrill. This method known as "Farm Business Analysis" will lend itself to almost every part of our total educational program.

From our limited experience, we have come to believe strongly that for greatest efficiency and effectiveness in fulfilling the role of county agents, we must direct our program primarily toward management and secondarily toward technology in production and marketing.

Over the years, we, as county agents, have been to a large extent production-practice oriented with our educational activities and methods. Based on our work in Business Analysis and in view of today's big investment farms, I do not regard this as the most efficient approach.

Certainly, Extension educational programs directed toward production and marketing practices have a big place, but we are now thinking that concentration of our Extension programs toward improved individual practices—such as fertilizing, harvesting, and insect and disease control, is a "shot in the dark"—is a clumsy, piecemeal approach toward fulfilling the role of the county agent.

We find that an Extension method that works with the management and business aspects of the whole farm is most effective in motivating learning in the various aspects of the total operation.

When farmers are presented with facts and figures concerning efficiency areas of their individual operations, they are strongly moved to learn and execute the technology needed to correct the problems.

In our opinion, we can't justify spending large portions of our time on the fringe areas of farm operations without facts and figures on the whole farm.

A farmer may be in possession of all the facts concerned with the technology of production, but if he doesn't know how to fit the whole jigsaw together effectively and apply it to the farm's overall operation, production technology facts or improved practices may lose their meaning.

On a countywide scale with a given kind of farm and individual farm basis, Extension personnel and the farmers themselves must find out where we are, what our resources are, and our problems affecting efficiency. From all this, using an analytical approach, we must make practical plans that embody needed changes in production, marketing, and organization.

Today's farmers in most instances have large investments in land, equipment, buildings, and livestock pertinent to their operations, and must be businessmen in every sense of the word. As an example, the average dairy farm in Manatee County, Florida, has an investment of \$235,000. A well-equipped office also is as basic as a tractor to the efficient operation of these farms. A farm is nothing more or less than a business firm buying inputs, transforming them, and selling outputs at the best obtainable profits. A farmer or farm manager is the controller of the inputs, and he must have facts. He must also know how to use these facts to make sound decisions. He must learn how economic principles affect his business, how to budget changes, and evaluate decisions by comparative and trend analysis. He must consider the overall picture, and work from there.

Many individual farms in Manatee County have shown dramatic progress. An illustration is the following table.

Item	Unit	Year	
		1961	1962
Adult cows	Nos.	180	210
Investment per cow	Dols.	1,263	1,202
Production per cow	Lbs.	7,110	8,830
Milk sold per dollar invested	Cents	39	48
Return per cow over feed	Dols.	269.71	377.52



In 1958, Clifford Alston, State farm management specialist, carefully explained to us a new Extension method called "Farm Business Analysis." It was quickly evident that this, when properly used, would help meet the challenge of a changing agriculture.

He pointed out some pertinent questions that the analysis would answer for the county and for the individual farms. Here are a few: Am I using my farm records to best advantage? Do I know my production rates per acre, per tree, per animal, or per bird? What is the productive efficiency of my labor? What are the weak and strong points of my farm business? What is my investment? What are my itemized cash and noncash costs per bushel, gallon, or ton?

Alston explained that the analysis report, say, on dairy farms in our county, would show averages for: (a) All dairies analyzed, (b) the high-cost group, (c) the low-cost dairies. Each individual farmer would also receive his farm figures listed beside the corresponding averages. Thus, he can quickly make comparisons, and use his records to locate strong and weak places in his business.

This method appeared to have strong possibilities of becoming a central part of our educational program, upon which we could base many Extension activities and measure total results. With Alston's and other State Extension personnel's continued help and guidance, we began using this method in 1959 with some of our dairies, ranches, and poultry farms. We have increasingly used Business Analysis, particularly with dairy farms, and have noted an increased level of management skills, leadership ability, and technical knowledge. We know now that Business Analysis is a foundation for good farm management.

We are now carrying out this program on 65 percent of the dairy farms in the county, and the following county averages show a few efficiency items and the tangible progress being made:

Item	Unit	Year		
		1960	1961	1962
Milk per cow	Lbs.	7,938	8,720	8,999
Net returns per gal.	Cents8	2.9	4.0
Labor income per cow	Dols.	35.45	61.74	68.87
Net cost per gal.	Cents ...	58.4	56.2	55.4

Since a Manatee County dairy farm averages over 200 adult milking cows, it is not difficult to see how labor income increased \$5,500 per farm from 1960 to 1961 and \$1,500 from 1961 to 1962. In reducing cost of production 3.02 cents per gallon, each farm producing an average of 177,635 gallons, saved \$5,365 in 1962.

In dollars and cents, the analysis pointed out to the owner many changes in production and management that had to be made. The principal one was that he wasn't producing and selling enough milk for his investment. This was corrected by buying additional milk base, increasing cow numbers and changing production practices to drastically increase production per cow. This farm has moved from a "struggling-to-exist" farm to one that is progressive and successful.



A fully-equipped office is the center of this dairy operation. It is here that records are kept, studied, and used in managing the high investment dairy business.

This Farm Business Analysis is the key that has unlocked several doors for us in facilitating our total educational program.

Through Business Analysis we have been able to put together factual information about the various kinds of farming, locating without guesswork the real needs or problem areas. The various commodity Extension Advisory Committees working with Extension personnel use this information in developing our longtime or projection programs for the various kinds of farming. With this help, all of our planning is based on facts existing in our county and the Extension programs can be directed toward overcoming major problems.

All educational activities are directed toward factual needs as brought out by the analysis report of county averages. It gives us an accurate means of evaluating progress of our Extension programs and program projection, and it is the basis for much information provided for farmers and the general public.

On individual farms, the county agent and the farmer can get in the middle of the business and take a critical look at the farm as a whole. They can look at the efficient use of the land, labor, and capital; can locate the strong and weak points of the farm operation; and put a finger on changes that need to be made or practices that need improving. They can look at the input-output data from which the farmer can budget changes. There is nothing that motivates learning quite so well as figures that deal with profits.

You might logically say, "This sounds fine, but it would be too time consuming." We have found that it lends itself to increased efficiency on the part of an Extension agent. A county agent represents an input of education, and must be interested in output from his time. We have come to know that 3 hours spent with a farmer in obtaining records gives an output in results far greater than many hours riding around over the farm, or talking about the farm in general without knowing many facts.

All of us have many and varied demands for our time, and we feel that moving toward this method of factually dealing with a farm as a whole will do much for our effectiveness and efficiency. ■

Farm Business Associations Complement Extension

by PAUL HASBARGEN
Extension Economist
Minnesota

THE TASK of record keeping is difficult to "sell" to farm families. Management concepts and tools are finding a broader market. Satisfy this market and the demand for record-keeping services will grow. This has been a basic premise behind the farm management educational efforts at Minnesota. As more and more families "graduate" from Farm and Home Development Workshops, the question "where to from here?" becomes more pressing. To answer this question, an expansion in the number of farm business associations is an alternative worthy of serious consideration.

History

Between 1902 and 1917 there were numerous detailed accounting routes in Minnesota. Their primary objective was to collect data for research. Fieldmen were instructed to refrain from advising their cooperators. The data gathered from these early account studies were published in Experiment Station bulletins. It was only at this point that the farmer cooperators could use the results to improve their own operations.

After World War I, new associations were formed under a significant change in the concept of their functions. Whereas the prewar associations were designed to obtain information on farm costs and farm earnings, a new objective of helping farmers to determine what could and should be done to maximize farm earnings was incorporated beginning in 1920. Farm accounting routes continued to be on a one or two county basis until 1928 when a cooperative farm management service was organized in six counties in southeastern Minnesota. This was patterned after the pioneer Farm Bureau-Farm Management Service started in 1924 in Illinois which combined research, Extension activities, and service to the individual farmer. After a 3-year test period without fees to farmers, the cooperators proposed a cost-share arrangement in order to retain the association in southeastern



Complete records are needed for pieces to fit properly.

Minnesota. This association has continued on a fee basis to the present time. Currently each member pays from \$52 to \$77 depending upon size of farm.

In 1940, a similar association was started in southwestern Minnesota. This one is also financed jointly from Extension and research funds besides farmer fees. Besides these two associations which employ full-time fieldmen to service the 170 or so members in each, there are other special farm management services sponsored by the University which have facilitated Extension educational programs.

Also, the vocational division of the Minnesota Department of Education offers a record analysis program through the vocational agriculture departments of the public schools. Vocational agriculture instructors give local supervision under the guidance of area coordinators who are using the same analysis procedures used in the current University farm record projects.

The Minnesota farm management associations have contributed greatly to Extension programs through the years. Since the early cost accounting routes, Minnesota Extension workers have had the benefit of localized cost and return figures to use in adult education programs. The annual reports along with other research and Extension publications which came out of these projects provide a continual source of information on trends in resource use and input-output data for use in farm and home planning. This data is used not only in farm management but also in home management, dairy, animal husbandry, and other Extension educational programs.

Extension work is also facilitated through the annual meetings of these associations and annual farm tours to which nonmembers are invited. Educational programs at these events may center on any topic of concern to farm families—from farm production problems to farm policy problems—from the development of physical resources to the development of human resources.

County agents often use association cooperators as test

demonstration farms. They become more familiar with these business firms and their problems and use the knowledge gained from this intimacy to counsel other families more realistically. When county tours are held, association farms are often visited since factual background data is more readily available from these farmers. Also, these farms have been a source of example or "case" farms for families to work with in the Farm and Home Development workshops.

In counties where there are no cooperators, agricultural and home agents still find much use for the current information found in the annual reports.

Future Possibilities

Extension workers are fully aware of the rapid changes in agriculture today. The number of farms will continue to decrease rapidly. The young farmers of today have larger units than older farmers. Those starting tomorrow will plan for even larger ones. These farmers look upon agriculture as a business as well as a way of life. They need better information on how to most profitably manage this business—they need better decision-making techniques and more accurate, home-produced data to use along with these techniques.

The credit needs of these larger operations are quite shocking when compared with earlier needs. Creditors are insisting on more detailed financial planning on the part of these large borrowers.

Current trends in Extension education programs are toward more formalized training schools—away from the one-shot general meeting. To provide the depth of content needed here, more information on operating farms is often desirable.

Also, a byproduct of the more intensive adult educational programs of today is an increased demand from farm families for more complete farm and home records. Farm and home development workshops as well as other types of intensive sequential classes, whether on dairy, hogs, or soils, create the desire for better individual records. This situation is not unique to Minnesota but is occurring in various degrees of intensity throughout the country.

The challenge to Extension is to develop and coordinate an overall program which meets all of the above needs—provides financial information helpful to credit agencies; develops a vehicle upon which to build an intensive educational program; meets the service needs as well as the educational needs of farm families; and provides a source of data for research purposes.

Some form of farm business association might most effectively meet these needs. Someone who is able to demonstrate to families how to use the information they receive in evaluating progress, analyzing practices, and planning adjustments must work with the cooperators. Unless provisions are made for such individual counseling, especially during the first few years in the program, records will continue to be unused tools on many farms.

Supervision of such associations could come from one or more of several sources. These include: A fieldman in a farm business association; an Extension agent in a mail-in account project; or a vocational agricultural instructor in a vo-ag records project. Leadership could



Should each commodity have a separate record system?

also come from other professional people in a mail-in account project such as: A district management specialist; credit agency personnel, vo-ag instructors; or DHIA supervisors.

However, when looking at possible organizational structures for getting this job done, the main purpose of Extension—*education*—must be kept in mind. We want to find a vehicle to facilitate the accomplishment of this objective and must avoid tying up our resources in service-type activities. The service aspects of a business association *must* be paid for by those receiving it.

The Challenge

The problem which Extension leaders in most States must face squarely in the near future is how to most effectively and efficiently provide for a complete supervised record program. Who will supervise the cooperators? Where will the financing come from? Will the educational purpose get top priority?

Coordination of existing and developing record programs is a growing need. Can Extension-sponsored associations, vo-ag-sponsored groups, the FHA, and private associations work together more closely? Should the different commodity groups go in different directions?

At the present time agronomists and soils specialists are developing and encouraging the use of improved crop record systems; poultrymen are experimenting with specialized poultry record forms; and dairymen are moving ahead rapidly on an improved DHIA program using electronic data processing. Is this the most efficient and effective direction in which to move? Is farming already so specialized that the dairyman or the beef producer can solve his problems by analyzing only his major enterprise? Or is it possible that one record system could handle all of these enterprises adequately and at the same time put together the pieces of the farm business?

As we continue to move in the direction of more formalized, intensive adult education programs we must develop a framework for handling the record needs of our clientele with the major objective being to improve and strengthen our overall education program. Unless farm business associations accomplish this, there is little room for them in Extension programs. ■

Farm Account Records

have alerted us to problem areas before many farmers were aware of changes taking place. They have kept us ahead of these changes rather than behind them." This is how Homer Hange, Medina County, Ohio dairyman sums up the way in which a farm accounting and farm business analysis program, conducted by the Agricultural Extension Service, has helped him to successfully manage his farm.

Homer and his wife, Doris, operate a 193-acre farm which they took over from Homer's parents in February of 1949—the same month they were married. Dad and Mother sold out "lock, stock, and barrel" and moved to town. The money Homer had saved while working for his father was used to make a small down payment on the farm, feed inventory, farm machinery, and the dairy herd. A mortgage to Dad and Mother covered the remainder.

Homer's first and perhaps most important use of records was in determining the feasibility of taking over the business. Both the current and past performance of the farming unit were well documented by 24 years of participation by his father in the Extension-sponsored farm accounting program. These records showed an earning capacity more than adequate to provide a living for the family and pay off the mortgage. Homer says "It looked as though all we had to do was keep the operation rolling."

Just "keeping things rolling" was not enough in the years that followed. Rapidly rising prices took their toll both in farm operating costs and family living expenses. Mechanization and new production technology were upsetting traditional farm organization patterns. Changes were in order!

An analysis of the Hange operation indicated the desirability of adding a few cows to increase income. This necessitated some mechanization in the barn to save labor and in turn, called for more cows, setting off

a chain reaction that is still going.

The original 18-cow dairy herd is now at 45 and still growing. Records have been used to plan the adjustments needed to maintain a proper balance between such things as size of operation, labor efficiency, gross income, and fixed costs.

During their first few years of operation the Hanges channeled every available dollar into debt retirement. As a result Homer feels the farming operation was "short changed." "We didn't use as much fertilizer and lime as was needed. Crop yields, especially hay, suffered. Our records showed that the cropping operation was not pulling its share. We are just now beginning to realize our full potential."

The farm account and farm business analysis project, in which the Hanges are enrolled, is part of a program conducted for many years by the Extension staff of the Department of Agricultural Economics at Ohio State University. In 1932 a more intensive program was launched in Medina County using a monthly mail-in accounting system. This county program has been operated continuously since that time with the help of the State staff. In recent years 80-90 farm account records have been included in the Annual Farm Business Analysis. Most co-operators also ask for individual assistance in studying their operation.

Three years ago the program was expanded to three adjoining counties under an informal arrangement for an exchange of work between the agents involved. The Medina County Agricultural Agent assumed responsibility for the farm management program and agents in the other counties led area programs in other subject-matter fields. As an outgrowth of this arrangement an area farm management position was established a year ago.

Farm records on 150 commercial dairy farms are the foundation on which the Area Farm Management Program is being built. Here is an opportunity to tap the experiences of this group of farmers with developments in dairy production and management and to evaluate the economic aspects of these changes for the benefit of all dairymen of the area.

A number of other Extension programs and activities have been helpful to the Hanges in making full use of their farm records. Intensive counseling on an individual basis was provided for several years through a farm and home development program conducted during the mid-fifties. Homer has been enrolled in many farm management, dairy, agronomy, and other Extension schools. Doris was one of 60 women enrolled in a "Farm Management School for Farm Wives," held in 1959. The dairy testing program has helped boost average output per cow to the present level of 15,000 pounds annually.

Records are continuing to play a vital role as the Hanges plan further adjustments. Homer knows he can't stand still if he is to keep ahead of change. Enough heifers are coming along to provide for some further expansion during the next year or two. Consideration is being given to adding enough facilities to accommodate 70-80 cows and going from part-time to full-time hired help. Cropping patterns are being altered to take full advantage of new technology.

Homer feels that being part of an organized record analysis program provides him with information that would not be available from his own records alone. He says, "The group analysis helps you see the total situation and yourself in relation to it, rather than just your own operation." ■

by MARSHALL K. WHISLER
*Area Extension Agent
Farm Management
Ohio*

The Accounting Dept. (Doris Hange) gives the Production Dept. (Homer Hange) a report on farm efficiency.



Farm Management

—an integral part of the Virginia Extension Program

by W. E. SKELTON
Assistant Director of Extension
Virginia*

THE FARM MANAGEMENT PROGRAM in Virginia has evolved from farmers' needs, detailed planning by farm management specialists, and appropriate emphasis and direction from the administrative and supervisory staffs. Recognizing its importance to commercial farmers, steps were taken in 1959 to plan and direct an effective Extension educational program in farm management.

Director W. H. Daughtrey, in his written statement on Administrative Expectations in Farm Management dated December 29, 1961, outlined the development and direction of this educational program. He stated:

"We started about 5 years ago with very little trained personnel at the State level and no specialized personnel for management work at the county level. During the past 3 to 4 years we have provided graduate training for specialists, schools for Extension agents, inaugurated a record-keeping system, and opened the door to linear programming."

Director Daughtrey stated further:

"We must prove to the public and commercial farmers that farm management work can be done successfully by county Extension agents. I am convinced that if we are to make progress and render the educational assistance required, it must be done by county Extension personnel. We cannot and should not have enough specialists to provide farmers with individual assistance, except upon a very limited basis."

These statements gave stature and direction to the educational program. They were developed over a period of time and represent the understanding and philosophy of the Extension staff.

It can be stated without reservation that positive direction by the director and his administrative and supervisory staffs is essential.

Part of County Program

After careful analysis and appraisal of past experiences in farm management, we recognized that an effective and successful program is dependent upon an accurate, continuing system of farm records and that farm management must be an integral and important part of the county Extension program.

**Acknowledgement is given to the Administrative Staff and other Staff Members for their help in the preparation of this article.*



At a recent county farm management school, these Virginia farmers applied the budgeting method of evaluating alternative courses of action. They used Extension agent-taught techniques as well as data from their own farms.

The county agent has responsibility for giving farm management orientation and direction to all appropriate phases of the county Extension program. This is a key to a successful educational program in farm management. Viable management education is problem-oriented and seeks to coordinate the contributions of all disciplines to rational decision making.

To be effective, emphasis must be placed on the importance of farm management as an educational program. This is not a program of record keeping.

The Extension program leader in economics studied in detail the procedures used by Michigan State University in 1958 for handling records. This system was adapted and modified for use in Virginia. Many States are now studying and keeping up with refinements in the systems used in record keeping and analyses.

The mail-in-records enrollment in 1959 was 75; 160 in 1960; 360 in 1961; and for 1962 and thereafter it has been limited to about 600.

Sufficient records are necessary and important to a good farm management educational program. Our present policy is to obtain just enough records to provide a laboratory of knowledge for the county agents to draw upon for data, for experience in business analysis, and for demonstration. The tendency to become absorbed in the details of record data collection must be resisted so

that the educational objectives of farm management can succeed. We support the economics Extension project leader when he says: "We have no interest in the drudgery connected with records, except as an adjunct to and in support of the educational job to be done."

Organizational Structure

The specialist in agricultural economics, through staff conferences, graduate training, and long-range planning, prepared for and accepted the responsibility for training Extension agents and developing the content and scope of the farm management program. The Extension project leader took the initiative and served as coordinator for the economics staff. The department head was an active participant in the staff conferences. In order to provide the necessarily intensive and competent training, the full resources of the department (the teaching, research, and extension staffs), were used in planning and developing the program.

The data processing facilities and resources of the Agricultural Experiment Station were made available without cost to the farmer in development of the record program. Its success can be attributed in a large part to the efficient machine processing of records by the Agricultural Experiment Station. Complete participation and cooperation by the entire staff in the college of agriculture is a "must" for a successful program because very few, if any, universities have enough staff in any one division to provide the required training and know-how.

Twenty-four new positions were established at the county level. This provides for three assistant county agents and one county agent-at-large in farm management for each of the six Extension Districts. Applicants are screened for interest in and qualifications for farm management work. After selection, an intensive training program begins.

The assistant agent in Cumberland County opens a farm management school with a discussion on decision making.



Today there are 15 assistant county agents and 3 county agents-at-large in farm management. The primary responsibility of the county agent-at-large is to foster, encourage, and help develop a farm management educational program directed primarily at the operation of commercial farms. He is under the direction and supervision of the district agent.

An assistant agent works in three or four counties, depending upon the need. The county agent-at-large trains and guides him. Since the county agent is responsible for the Extension program, he and the assistant agent cooperatively plan the program for a specific county.

The director's office, district agents, and specialists in farm management hold frequent conferences to plan, evaluate, and project into the future. This type of planning is essential to coordination and direction.

Feedback from the county staff is also essential. A committee representing the farm management agents meets with specialists to report on progress, focus attention on problems, and develop procedures to be used in the training program for agents and farmers.

Agent Training

Five groups of agents in the State have now received varying amounts of formal classroom training in farm management. The teaching staff consists of those best qualified from the resident teaching staff, Experiment Station staff, and Extension staff.

The staff from these three divisions, working cooperatively, developed the course content and served as instructors. In September 1963, the training was approved for 6 credit hours in graduate study—a clear indication of the depth and scope of the training being provided.

Group I is composed of those assigned full-time work in farm management. They have received up to 200 hours of instruction, depending upon their tenure of employment. Recognizing that all agents in agricultural counties need this training, plans were made for them to receive it. They were designated as group II, III, IV, and V agents. On the basis of experience, we believe that all county agents must have a minimum of 3 weeks intensive training if they are expected to accept the responsibility for an educational program in farm management.

Farm Management Schools

Schools are held on a district basis in three or four counties for a minimum of three 5-hour sessions. This training is given to a group of about 20 carefully-selected farmers in each county. We do not think it an efficient use of time and effort for the teaching agents to develop intensified courses of instruction for small groups in only one county. An additional 15 hours of higher-level instruction is planned for those participating.

The district agent is responsible for liaison between the counties, administrative staff, and the Department of Agricultural Economics. This includes arranging time, place, adequate staffing, preparation, and practice sessions. The county agent-at-large in farm management has specific responsibility to develop an effective and aggressive educational program.

The Department of Agricultural Economics farm man-

agement staff is responsible for content and quality of subject matter. These specialists assist the county staff in training sessions. The schools are not conducted until the specialists and the county staff are satisfied that preparation is complete and adequate.

The county agent in the county where the school is being conducted and Extension agents assigned to farm management, serve as instructors. This is necessary and important for a successful educational program in farm management.

It is essential to establish clear, concise steps for use in planning, directing, and conducting the farm management program. The steps listed below are important and necessary.

1. Those assigned to farm management must give first priority in time allocation to this work.
2. Develop a written statement of administrative expectations.
3. Assign agents at the county level to farm management and provide them with sufficient training to do an effective teaching job.
4. Extension agents trained in farm management should teach the county farm management schools.
5. Hold periodic conferences of administrative staff, district agents, and farm management specialists.
6. A committee of farm management agents must work with Extension farm management specialists to develop the educational program.
7. Provide adequate training aids and equipment to do a superior job of using various teaching methods.
8. Instruction for the farmers must be on a high level. Do not underrate their ability and need.
9. Develop and maintain an aggressive instructional program for Extension agents.
10. Provide an environment for free exchange of ideas between the staff and farmers.
11. Establish goals for farm management education, as well as teaching goals and objectives for instructors.

Results and Future Plans

Appraisal by farmers is the true test of the program's success. They have participated actively and have taken the designated hours of instruction.

In written reports they have praised the excellent instruction and the high-level content of the courses. Upon completion of the first course, they asked that others at a more advanced level be presented.

There are many farms which show an immediate increase in net income. Farmers like the farm business analysis because it indicates areas of inefficiency. By budgeting a concentrate ration, a dairy farmer decreased purchased feed costs from \$145 per cow to \$64 in 1 year with no significant change in milk production; the net farm income increased 114 percent.

We will continue to select and train the county staff. We plan to add 3 county agents-at-large and increase the number of assistant agents to 18. At this point, several will be employed in training positions to fill vacancies as they occur in the county staffs.

Extension specialists in animal and plant sciences and social sciences recognize a need for this training. We plan to give this intensive course in farm management to selected Extension specialists so they can use the principles of farm management in the total Extension program.

Farmers now receiving intensive assistance with records and resource adjustments through personal contacts with the agents will receive less assistance after adequate instruction. The basic objective is to teach them the principles of business management to use in making decisions as they occur in daily farm operation. This will make it possible to reach other farmers who are now requesting the training. In addition, the information gained from the farm records analysis and from comparing the results of resource adjustments on net income will serve as a sound basis for a farm management educational program on a county or production area basis. ■

CORRECTION

Robert C. Bealer, Assistant Professor of Rural Sociology, and Fern K. Willits, Instructor of Rural Sociology, The Pennsylvania State University have requested the *Review* to run this statement:

"We would like to correct a reference made by George V. Douglas and Don Agthe in a recent article in the *Extension Service Review* (THE IMPACT OF URBAN OUT-MIGRATION ON RURAL YOUTH, Vol. 34, No. 8, August 1963, pp. 148-149). The reference was to some research on rural youth that we have carried out.

"They asserted that our studies indicated 'one of the results of contact with urban youth in high schools was for a substantial number of farm youth to become drop-outs.' However, we have never published nor made available for publication any data on high school dropouts.

While we are currently undertaking work in this area, nothing that we have done to date indicates whether their assertion is true or false. As a result, they are in error in attributing the conclusion about dropouts to us.

"They go on to assert that we found 'there were conflicts between the farm youth and urban youth over attitudes toward dating, staying out late, social drinking, spending money, and other similar situations.' We did find that there were *differences by residence* in the attitudes of youth with boys and girls from farm homes being the least permissive of nontraditional behavior, and town youths being more permissive. However, the interpretation that differences in answer patterns is a signal to conflict was theirs, not ours. We did not and do not have data to evaluate whether stress or conflict occurred."

What Records Do Farmers Need? X

Today the average commercial farmer manages many resources—land, labor, capital. Accurate and complete farm accounts help determine how effectively he is organizing and utilizing his resources.

by DEAN BROWN
Farm Management Economist
Nebraska

MUCH has been written concerning the use of records in the farm business, and the contents of a complete farm record system. The farm management specialist and county Extension agent who have done farm record work with farmers are well aware of the academic reasons for keeping records. Following is a list of some of the important uses of farm records. It has been developed to imply both the use of records and their value.

1. Improving management of the farm through effective analysis.
2. Filing accurate and well-substantiated annual income tax returns; and permanent proof for possible audits.
3. Planning and budgeting the farm operation for the future.
4. Planning insurance needs and substantiating possible losses or insurance claims.
5. Establishing and maintaining a good credit position.
6. Determining financial progress.
7. Resolving landlord-tenant problems about lease arrangements.

Most farmers *know* how farm records can be used. Yet, a large majority of these same people have not been motivated to actually keep good records. They have not been convinced of *why* and *how* such records can be of value to them.

Part of the failure to keep good farm records and use them in the management of the business stems from the fact that the farmer is responsible for all the various aspects of his business. He does most or all

of his marketing, provides his own labor, and assumes the full responsibility for the day-to-day operations and management of his farm. In allocating his time, he fails to reserve any part of his "working" day for record keeping and management analysis of his records.

Part of the fault also must be directed to the Extension worker and other agricultural educators. We simply have fallen short in our efforts to indicate the importance and value of good farm records. In other cases, we have failed to provide adequate education in the use and interpretation of business records for many farmers who have undertaken the task of keeping complete and accurate accounts.

Farmers take a practical approach in managing and operating their businesses. They expect their dollars and labor invested to return a profit. But the returns from keeping and using farm records most often is difficult to measure. As an intangible the value of records must be dramatized in ways other than "increased yields per acre, more pigs per litter, or more milk per cow."

One approach is to point out the value of records in terms of how they can help the farm operator solve important management problems. Here are a few of the problem situations which help illustrate this point.

1. Am I fully utilizing my resources—feed, labor, land, capital? If not, is there some other way of using them more fully? Are additional resources needed to supplement those I already have in order to increase my efficiency?

2. How might I reorganize or expand my farm business to increase my income? Should I expand my hog, beef, dairy, or other enterprises?

3. What type of farm organization is best suited for my farm or ranch?

4. Is my present lease fair and reasonable? How can I improve my leasing arrangements?

5. How can I establish and maintain a good credit rating?

6. Can I substantiate insurance losses or claims for liability?

7. Is it possible to improve my income tax management and reduce my tax liabilities?

What kind of records does a farmer need to have for use in managing his business? This can best be indicated by relating the kind of records to their intended use.

Income tax—Federal and State.

- General account of all farm income and expenses.

- Account of all capital assets disposed of during the year.

- Inventory and depreciation schedule of all depreciable assets, including machinery, equipment, buildings, other improvements, and breeding livestock.

- If income tax accounting is done on accrual (inventory) basis, then complete inventories of livestock, feed, and supplies also must be kept on an annual basis.

Property Tax.

- Inventory of land, buildings, improvements, machinery, equipment.

- Inventory of livestock, feed, and supplies and/or annual record of crop and livestock production.

Credit Rating.

- Periodic net worth statements to

give picture of current assets, liabilities, and financial progress.

- Income and expense records along with inventories to indicate productivity and earning capacity of farm operator's business.

General Business Analysis.

- All records previously listed, plus,

- Complete record of crop production and land utilization.

- Complete record of livestock production and feed fed.

Enterprise Analysis — Cost Accounting.

- Identification of all cash expenses and physical inputs associated with enterprises to be analyzed.

- Record of labor used for various operations associated with each enterprise.

- Identification of all income and production associated with enterprises to be analyzed, indicating quality and grades.

- Record of costs for individual machines, equipment, buildings, and improvements, and proportion of costs chargeable to specific enterprises.

- Memorandums of management practices, breeding records, and other records useful in management analysis.

The full list of records needed for management analysis and cost accounting may look formidable to the farmer who has been accustomed to keeping only the records necessary for tax reporting. Yet, it does not require a great deal of additional effort and time to keep complete and accurate records for management analysis purposes. As a result, the additional value of such records most often far exceeds the effort required.

The value of farm records can only be realized as the farmer makes effective use of them in his business. Complete farm records become more valuable and useful as several years of information is accumulated. This means that record keeping is a long-time venture, which should become a permanent part of the farm business. Extension workers cannot overemphasize this point. Farmers must be alerted not to expect spectacular returns or value from 1 or 2 years of record information.

On the other hand, the value re-

sulting from properly organized and executed farm record programs can sometimes be impressive in individual cases. Such experiences should not be overlooked in providing motivation to encourage farmer participation in Extension-sponsored farm record projects. Examples of how good records have brought immediate benefits are given in the following paragraphs. These are experiences reported by county Extension agents working with the Electronic Mail-In Farm Record Project in Nebraska (NELFAR).

In enrolling and helping farm record cooperators get started, county agents are instructed to have each farmer make a complete inventory of all farm machinery, equipment, and other capital assets used in the farm business. This inventory is then checked against the cooperator's current income tax depreciation schedule. In one county, over 80 percent of the cooperators have uncovered depreciable assets that have been overlooked in completing income tax depreciation schedules. This procedure has been repeated many times throughout the State and has resulted in immediate dollar savings in taxes to cooperators.

An annual credit inventory is made of all mortgages, notes, and unpaid accounts along with accounts receivable for each cooperator. This is brought up to date during the year as debt payments and new loans are made. At the beginning of the year the credit inventory of one cooperator consisted of several unpaid ac-

counts, plus 14 separate notes and mortgages. In approaching his local banker for an additional operational loan, the cooperator was first turned down. He was then told to furnish a complete credit picture and net worth statement if the banker was to reconsider the request. Upon submitting his farm records to the banker, the farmer received the additional credit he had requested. In addition, the banker refinanced the cooperator's notes and unpaid accounts to ease his repayment obligations.

A severe windstorm hit part of Nebraska this past summer destroying many small and older buildings and inflicting major damages on others. Seven farm record cooperators in the area were faced with the problem of substantiating their damages suffered from the storm. Prior to enrolling in NELFAR, none of these cooperators had maintained complete, detailed inventories of such information. In all cases, their financial inventories of capital assets provided the necessary detailed information required by the insurance companies.

Success in farming is more and more dependent on good, sound management. Good management calls for ability to make logical decisions and for constant evaluation of the results of these decisions. A good set of farm records helps with both jobs. This is the ultimate management value which Extension workers must keep in mind in developing and carrying out farm record management programs. ■

Information on livestock production is needed for enterprise analysis.



*A section of the
computer laboratory at
Michigan State University.*

by PAUL R. ROBBINS
*Extension Economist
Indiana*

and JOHN C. DONETH
*Extension Economist
Michigan*



+ EDP and Mass Management X

How would you like to race John Glenn or one of our other astronauts in their 17,000 m.p.h. space ships while you are on foot or in the family auto? Sounds like a silly question, but it really isn't any more absurd than attempting to compete with an electronic computer in the manipulation of data and in making mathematical computations by hand.

As fantastic as increases in rate of travel may seem to most of us, increases in rate of data processing have been even more rapid in recent years. If you did a good job of learning your multiplication tables, you can probably average one or two multiplications per minute by hand when multiplying 3-digit numbers. A good calculator operator may average 10 multiplications per minute on an electric calculator. There are now electronic data processing machines that can make over 7 million such calculations per minute. Furthermore, these machines can multiply 6-digit numbers as rapidly as 2 digits—and without error!

Machines not only can process large amounts of data swiftly and accurately, but can also penetrate it deeper than ever before realized, and can carry the data in storage. Furthermore, some contend that the machines can do the job cheaper than with traditional hand methods—everything considered. Learning how to use these machines presents many problems, but

quite a few solutions have been found. Others are forthcoming soon.

This doesn't mean we use computers for everything just as we wouldn't blast off in a space ship if we were only going to the corner grocery store. However, when one really gets serious about helping to serve the masses of farmers with the vast amount of record information needed, he is embarking upon an adventure much greater than going to the corner grocery. Just as new equipment, techniques, and know-how were necessary to orbit the earth; so are these things necessary for conducting a mass management education program through the use of more and better records.

In the past, many States have had no continuous farm record analysis program due to the time and cost involved. Other States, by hand methods, have managed to summarize a few hundred records per year. But in any case, the service has been available to an extremely limited number of usually the better commercial farmers. Even the summary and analysis of the limited number of records by hand methods has been so slow and tedious that the record data has often been out of date before the farmer got back the reports.

Can The Job Be Done?

While serving the best farmers is a must, in a democracy the very

principle of education for all is held sacred. However, it isn't necessary to make a choice of either the few or the many. Some well-qualified individuals say that the electronic data processing equipment can do about anything desired of it in processing farm records. With the computers and coding systems now available at some universities, farm and family transactions may be recorded into any one of 300,000 or more categories and may be summarized in a matter of seconds.

If a system can be put together to more fully utilize the potential of electronic data processing; the results would offer the opportunity for a management education program which would not only extend the imaginations of the best farmers but would also be fully able to serve all interested. The statements here pertain to the summarization of more general types of farm records. The system could be carried to greater depths involving complete enterprise and cost accounts or even linear programming.

Certainly, there is much more to keeping and using records than what the computers can do. The farmer still must provide large amounts of accurate raw data. Even in providing the input data, however, the computer can simplify the job. It isn't at all necessary for the farmer to sort and categorize the data as he has traditionally done in farm

record books. The machines can do this job much more efficiently than the farmer.

The job of training or retraining farmers to a new system of record keeping is not easy. Part of the problems arise due to flexibility features of the new system. Farmers may keep simple financial records and have the results processed. More detailed records can also be kept and processed. In other words, the machines can only return results commensurate with information details provided. The final product in any case must be put in the most usable, understandable form possible, and often must be interpreted by face-to-face contact with the farmer. Hence, the matter of working out the procedures for getting the raw data, then in getting the summarized, analyzed data returned to the farmer so that he can and will use it correctly, presents much greater challenges than do the actual machine processing operations.

But these operational procedures and details don't appear to be insurmountable. The important thing is that electronic data processing does offer a real breakthrough in record summary and analysis. Once the procedures are clearly spelled out and understood, it is believed that large numbers of records can be summarized in great detail for a reasonable charge—and this can be done without getting the staff bogged down in record-keeping details.

In short, the more rapid processing should: (1) Make possible the timely return of reports and summaries; (2) add flexibility and greater detail in the analysis; (3) provide opportunity for more farmers to participate in record analysis programs; and (4) provide a much better opportunity to combine record analysis work with ongoing research.

TELFARM Program

Michigan State is launching a mass management education program through an expanded mail-in record project. They started an experimental mail-in, mechanized record project in 1957. In 1958 a complete conversion of record analysis was made to this system. In 1963 the program has an enrollment of about

1,200 farm accounts and 150 home accounts, with the University carrying most of the financial responsibility. Sixty farmers were enrolled on an experimental basis in 1963 paying an educational participation fee of \$50 per year. Other co-operators paid only a small fee for books and supplies provided.

Let's examine Michigan's proposed program for 1964. This program is called **TELFARM** which stands for Today's **E**lectronic **F**arm Records for Management. The educational phases of the program are being experimentally tested through the addition of six district farm management agents financed by a Kellogg Foundation Grant of \$304,979 covering a period extending through 1965. The goal for 1964 is to enroll approximately 3,000 farmers (15 percent of Michigan's commercial farmers) on a fee-participation basis. However, the program is open to anyone desiring to participate. The educational participation fee, based largely on size of business, will range from \$70 to \$180 in 1964 and average about \$100 per farm. The number of co-operators will be expanded as farmer interest warrants and as the capacity to process additional records and conduct the accompanying management education program is increased.

Records will be analyzed in greater depth than previously. However, the participating farmer has the option of mailing in only sufficient information for the preparation of a financial summary and inventory and depreciation schedules. But if desired, he may also keep credit accounts, labor accounts, partial enterprise accounts, and home accounts.

Farmers will receive reports in time to be useful in making tax reports, tax management, and planning decisions. They will receive quarterly reports in which various items of income and expenses are classified and totaled. For tax reporting, they will receive in January a financial summary and depreciation schedule for the previous year's business. Comparative analysis reports to be used in planning the current year's business will be received in March.

On request from cooperating farmers, duplicate reports on his business will be provided to lending institutions or others.

Mail-in records have provided most of the needed data for several research projects in Michigan. With only limited additional information, the record data appear to provide opportunities for studies on enterprise economics and farm practices.

Facilitate County Programs

Most Extension agents are finding it increasingly difficult to stay proficient in all subject-matter areas to the extent that they can work effectively with their topflight farmers. What role can the county Extension agent most effectively fill in these times of rapid technological and economic change in agriculture?

A substantial number of good record co-operators in a county tend to give a management orientation to that county's Extension program. Records should help the Extension worker in making a more effective appraisal of the managerial capability and capital strength of individual farmers.

It's essential to know the farmer's strong and weak points if one is to work with him most effectively.

Hence, it would appear that an expanded record program offers the county worker a unique opportunity to help launch a mass management education program that isn't being and probably can't be provided by other institutions or individuals.

In short, the farmer is constantly faced with new ideas, new technologies and rapidly changing economic conditions. He needs help in sorting out and integrating into a well-rounded unit those things which will be profitable for him. The Extension agent is often one of the few that the farmer can go to who doesn't have something to sell or an ax to grind. Record summaries as prepared by most universities in the past have been helpful for the few farms on which they were available. Electronic processing can provide more detail on more farms; hence the county Extension worker's hand could be greatly strengthened in management education. *(Continued, back cover)*

What's Ahead?

Electronic data processing is opening up new frontiers undreamed of by the very best farmers. Take the area of feeds alone, a cost that generally represents one-half to three-fourths of the total cost of raising

livestock. We are now on the verge of providing least-cost feed combinations that can save many farmers more net dollars than they are currently making.

More and better enterprise accounts will help farmers make sharper decisions in the expansion and

contraction of various enterprises. Detailed records on individual prices of machinery and equipment will assist farmers in deciding what kind and how much machinery to own.

The challenge is great. Are we going to meet this challenge or shall we let opportunity pass us by? ■



Illinois Will Study Area Affects Of Individual Farm Adjustments

RAD experience in Illinois has shown the need for farm management planning. RAD committees are finding that individual farm adjustments are basic to area agricultural development.

Most farm management studies to date have been concerned with finding high-profit systems for specific farms. Up until now, they haven't studied ways these individual adjustments could add up to affect the entire farming area. This is the kind of information RAD committees need. This is what they will get from a University of Illinois Cooperative Extension Service study.

The study will concentrate on meeting RAD committee needs for farm management information in the southern part of the State. The objective of the study is to estimate the area's potential for improving agricultural production and income. Researchers will outline the area's present pattern of production and

income and then use linear programming techniques to analyze production possibilities within limits of the area's farm production resources.

Information from farm account records, test demonstration farms, county Extension farm advisers, and previous area studies will be used as sources of data for input-output relationships and other enterprise information.

Farm records available from co-operators in the Southern Illinois Farm Bureau Farm Management Associations are an important source of information about present production and income patterns. Although these tend to be high-level performance farms, they will help assess the area's potential.

New farm plans will be developed for test-demonstration farms with representative resource patterns. Their progress in adjusting to these optimum income systems will be studied.

Census data, soil surveys, and oth-

er sources will provide estimates of the types and quantities of resources potentially available for agricultural production. Then, within these area restrictions, the economists can make estimates of potential farm production and income to provide answers on area effects as well as upon individual farm adjustments.

Results of this area study will be used to help guide further individual farm adjustment in the Illinois RAD program. Input-output data used in programming area adjustments will be useful for preparing individual farm and enterprise budgets. Extension publications dealing with individual enterprises or resource requirements for representative farming systems will include such budgets. Capital and other input requirements, and output and income potentials will be presented on planning forms that farmers and Extension workers can use. ■—*University of Illinois Cooperative Extension Service.*